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Peru

The mere mention of the name Peru evokes images of fabulous Inca treasure, of Spanish galleons loaded to the gunwales with gold and silver bars, of curious-looking animals—the alpaca, the vicuña, the llama—and vast mountain chains rising to dizzy snow-clad heights. To the west of the mountains are dry trackless deserts cut by fan-like cultivated oases along the silt-bearing rivers; to the east are vast hot dense rainforests, through which wander a few naked nomadic Indians. On the high cold plateau (known as the *sierra* and the *altiplano*) between the majestic Cordilleras, the inhabitants shiver through the nights waiting for the warmth of the fiery gold disc in the sky. Here the sun-worshiping Incas had their cultural center of gravity in pre-Spanish days and created a highland empire unique in the world.

HISTORICAL HIGHLIGHTS. The imperial system of the Incas was highly efficient. Recently conquered tribes were thoroughly indoctrinated with the culture of their conquerors by being divided into small groups and dispersed among more trustworthy subjects. A system of roads and bridges, a messenger service, and guest houses scattered throughout the country enabled the rulers in Cuzco to maintain communications with the provinces.

Society was divided into the hereditary ruling class, the priestly hierarchy, and the people, and each rank was responsible to the next higher one. Each year families were assigned plots of land sufficient to support their members, and the products of the soil and the wool of llamas and alpacas went into government storehouses to be apportioned according to need. Individuals also paid tribute to the state in products of their various skills and crafts or by labor on public roads, buildings, irrigation systems, and agricultural terraces. The ruling and priestly classes lived extremely well, and among the people there was neither extreme affluence nor grinding poverty.

However, all was not entirely well. In 1532, when Pizarro arrived, there was insurrection within the empire, which enabled him to pit the two factions one against the other and thus topple in the mad quest for gold the most advanced culture in the New World. Pizarro's inability to control his men also left a legacy of violence and lawlessness, and during the following 250 years the condition of the Indians became deplorable. Laws promulgated to protect them were not enforced, and they were constantly being kidnapped to work in the silver mines and on the sugar plantations. In 1780, unable to endure more abuses, some 60,000 Indians, led

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by Tupac Amaru, revolted (unsuccessfully) against Spanish rule. This was the first of a series of rebellions sparked by Indians, and later by aristocratic Creoles (Spaniards born in Peru) who resented being excluded from the highest offices which were reserved exclusively for Spaniards born in Spain.

Even after independence had been achieved in 1821, various military chieftains struggling for the office of president kept the country in a turmoil. Then Peru suffered a distastrous defeat in the War of the Pacific at the hands of Chile. Following this, efforts were made to reconstruct the country, notably by such autocratic *caudillos* as Eduardo Romana, who stabilized the currency and built the railroad to the copper mines of Cerro de Pasco, and José Pardo y Barreda, who promoted educational and industrial development. But from 1908 to 1912 and from 1919 to 1930, under Augusto Leguía y Salcedo, once again social turmoil and unrest were the order of the day. He throttled the press and vastly increased the public debt with very little tangible benefit to the country. And nothing was done for the Indian. Indeed, the Peoples Universities, established to bring education to the masses, were closed down. One of the big problems of Peru is still the poor condition of the Indians, who have little voice in the government and are exploited as cheap labor in the mines and on the plantations.

THE COASTAL DESERT. In the part of Peru lying between the Andes and the coast, the dominant winds, associated with the anticyclonic belt over the south Pacific Ocean, are from the south or southwest. Since they blow across the remarkably cool northward flowing Humboldt Current, they bring no rain. However, during the winter months, from May to October, in the south, their moisture often condenses to form a dense cloud of fog, called the *garua,* a slight drizzle stopping just short of actual rain, like a Scotch mist, that humidifies the gardens along the coast and the pastures in the foothills of the sierra. During the summer the sun is strong enough to prevent the formation of the *garua,* and the whole of coastal Peru then enjoys glorious weather.

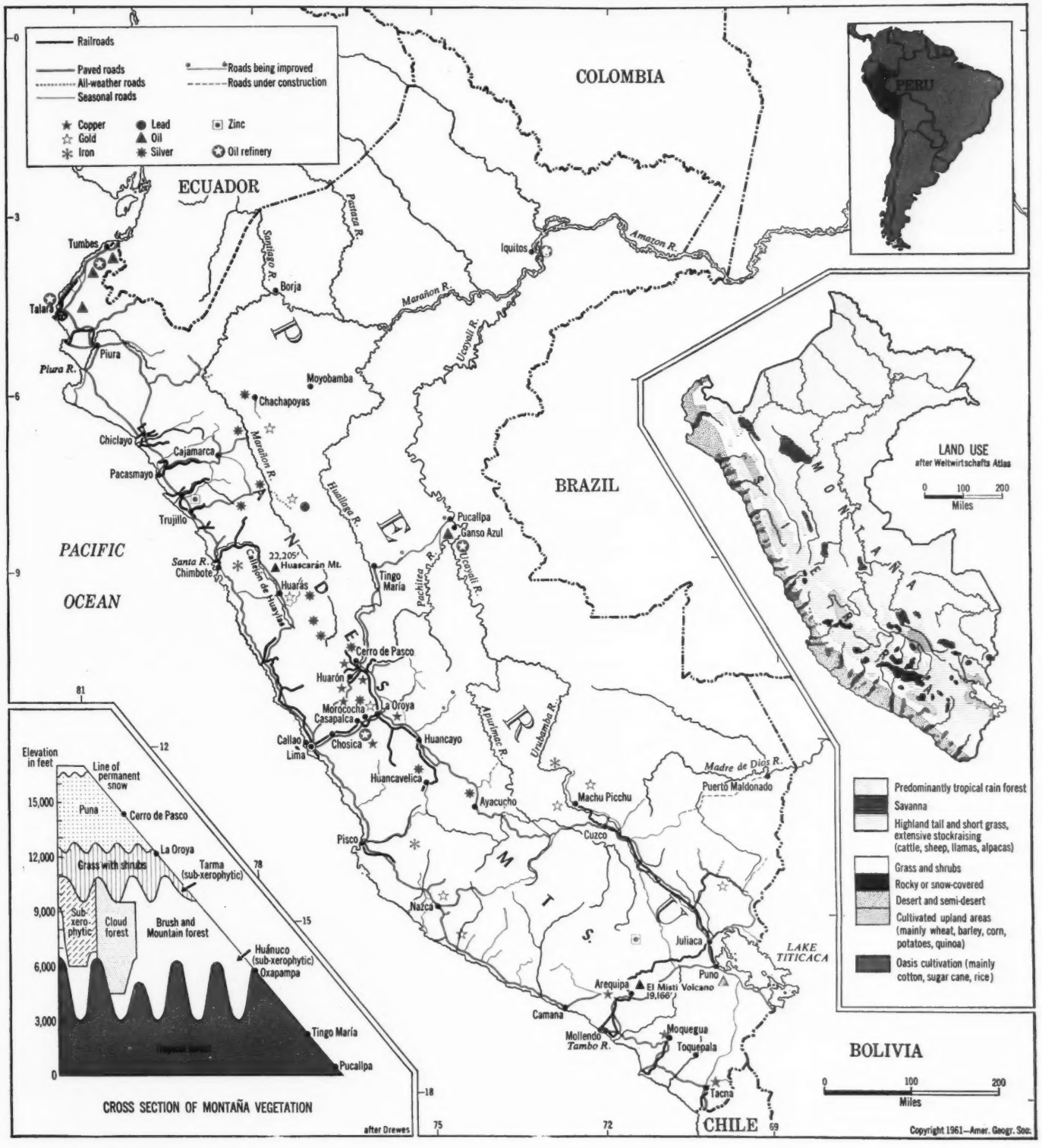
This narrow strip, 20 to 80 miles wide, in which live 27 per cent of Peru's 10 million people, is the country's most productive agricultural area. There are some 40 fertile oases, to which ingenious irrigation works bring sufficient water to produce abundant crops of sugar cane, cotton, rice, vegetables, grapes and other fruits, and some wheat. However, still more water should be made available for irrigation, and the capital for new irrigation works could come from the royalties paid to the government on the oil being extracted from the rich fields at Talara.

Fishing is another major source of income. The cool Humboldt Current is rich in fish, the basis of a growing industry, and also food for birds which live by the thousands in the offshore islands and whose droppings provide several hundred thousand tons of guano a year, used as fertilizer in the oases.

Other principal industries in the coastal strip, besides the extraction and refining of oil at Talara, include the making of steel at Chimbote (since 1958), using local iron and hydroelectric power from the picturesque Santa River; the extraction of copper from mines recently opened near Moquegua; the refining of sugar and the spinning and weaving of cotton, wool, silk, and rayon in Lima, the capital, and several other cities. Through the port of Callao, which is currently being enlarged, pass 75 per cent of the country's imports, mainly machinery, vehicles, iron and steel manufactures, chemicals, pharmaceuticals, and wheat; and some 20 per cent of the exports, mainly cotton, cane sugar, lead, copper, and iron ore.

THE SIERRA. The great majority of Peru's 3 million Quecha-speaking Indians live on the inhospitable high plateau which comprises roughly 33 per cent of the country—or rather they live on the floors of the deep intermontane valleys and cultivate carefully terraced plots of ground perched on the seemingly unscalable mountain slopes. With admirable patience and industry they climb the mountains to till these tiny patches that yield little yet require enormous outlays of labor to produce at all. The labor involved in building the retaining walls and in keeping them in repair is stupendous, to be undertaken only by those to whom the possession of land is almost sacred and whose sense of rewards differs markedly from our own. One of the most productive of these mountain-girdled valleys is that of Huancayo (elevation 10,000 feet), where corn and barley are grown, and 40 per cent of the nation's wheat crop is produced.

Higher still, in the semiarid *altiplano,* from 12,000 to 15,000 feet in elevation, Indians graze



Maps drawn by Vincent Kotschar

their cattle, sheep, llamas, and alpacas on the coarse grasses and thorny shrubs native to such heights. The higher and more exposed parts are so cold, rocky, and windswept as to be almost uninhabitable.

Perhaps one-half of the Andean Indians live in Indian agricultural communities, some of which are

completely independent; the others work on *haciendas* (estates) owned by whites or *mestizos,* who have complete economic, political, and judicial power over their *peones.* By custom, one adult member of each family is obligated to work a certain number of days a week (three, usually) for the *hacienda* in return for the right to occupy a small plot of land supposedly sufficient to support his family. In addition, the *peones* must supply the *hacienda* with free services as cooks, grooms, watchmen, shepherds, servants, and the like.

The small independent farmer who grows potatoes, barley, wheat, corn, or some other grain, can count on an average income equivalent to from U.S. $50 to $110 a year per family of five. This sum must cover production costs as well as living expenses.

To raise living levels to acceptable standards, the first requisites are higher productivity and greater returns for work performed, yet such cannot be envisaged without a vast program of land reform, and a large increase in capital resources, managerial capacity, and trained workers at every level. Even if production doubled, living levels still would not rise to acceptable standards, for farming units are greatly overstaffed. However, the actual manpower and the huge potential hydroelectric power in the Andes, if properly utilized for industrialization, could provide an outlet for labor from the ranks of the underemployed in the overcrowded rural areas. Among the industries suitable for location in the Andes are the making of shoes, clothing, furniture, soap, and ceramic wares.

The vast area east of the Andes, variously known as the *oriente,* the *montaña,* or the *selva,* which encompasses the foothills and some parts of the Amazon flood plain, is potentially rich in natural resources, but the settlement of tropical forest areas requires experience and skills which the Andean Indian does not have. Further, the illiterate Indian, almost invariably without capital, rarely has a chance to buy suitably located land at official prices, because of the activities of speculators. However, long-range national—or better still, international—planning undoubtedly could solve most of the problems of opening up the tropical areas suitable for cultivation, such problems as diseases, illiteracy, language barriers, lack of capital and roads and markets.

The large-scale shifting of rural population from agricultural activities to industrial ones in the Andes, and migration to the tropical lands to the east would go a long way toward alleviating the poverty of the Andean Indian.

HIGHLAND MINERAL WEALTH. In the bleak mountains of the *sierra* some of the richest mineral deposits in the world have been found. Silver mines made Peru world-famous during the colonial era. With the coming of the age of electricity, the demand for copper skyrocketed, and in the early years of the twentieth century copper mining became enormously profitable, with gold, silver, and lead as by-products. Today, lead ranks first in value among the highland minerals. The chief mining centers are at and around Cerro de Pasco, Morococha, Casapalca, and Huarón, and also, Minaragra, west of Cerro de Pasco, which now produces about one-quarter of the world's output of vanadium. Most of the minerals are processed in local foundries and reduction or refining plants.

TRANSPORTATION. The two main railway systems were originally built to tap the minerals of the *sierra.* The Central Railway, the highest in the world, runs from Lima to La Oroya, with an extension north to the Cerro de Pasco mines, and another south as far as Huancavelica; in a distance of 100 miles this most scenic railroad reaches an elevation of nearly three miles, via 21 switchbacks, 61 steel bridges, and 66 tunnels. The Southern Railway runs from Mollendo on the coast through Arequipa to Juliaca, with a northern extension to Cuzco and beyond to Machu Picchu, famous "Lost City of the Incas," and a southern extension to Puno on Lake Titicaca, with steamer connections to the Bolivian railroads at Guaqui. These railroads drain mineral and agricultural products from the *sierra* but carry little return cargo, for the purchasing power of the highland population is extremely low.

Peru has long had a vigorous road-building program. The road paralleling the coast from Ecuador to Chile, that links the coastal oases to Lima, has been in service for 20 years and is kept in good repair. Feeder roads to the coast from the *sierra* include the Cuzco-Arequipa-Camana, the Cerro de Pasco-Lima, and the Cajamarca-Pacasmayo routes.

The highway across the Andes from Lima to Pucallpa, by way of Cerro de Pasco and Tingo María, is the only good one connecting the capital with the *montaña.* More roads are needed from the

sierra to the vast underdeveloped *montaña* if settlement is to be encouraged and the products of the hot country are to be made available to the highland people.

In recent decades the airplane has been used increasingly to link the remote parts of the republic with the capital and tie together, as it were, the loose ends of railroad, river, and highway transportation.

THE MONTANA. The tropical forested lowlands lying east of the Andes comprise about 60 per cent of the national territory (they are larger than the state of Texas), yet only about 1.2 million people live there. Exploitation of forest products, such as hardwoods, tannin, and oil nuts, remains the principal economic activity, though the skins of wild animals and some tropical fruits are exported in small quantities.

For some years there has been a feverish search for oil and huge deposits may indeed be found eventually, but at present production is limited to the wells in Ganso Azul, producing from 500 to 1,000 barrels of crude oil a day, which is processed in a small refinery into various grades of diesel fuel, low octane gasoline, and kerosene for the local market. The field is located on the Pachitea River, and crude oil and petroleum products are loaded into shallow draft barges for shipment down river. Some of the crude oil reaches Iquitos, where it is processed in a small refinery.

INCORPORATION OF THE INDIAN INTO NATIONAL LIFE. Physical barriers, lack of racial cohesion, grinding poverty among the Indian masses, individual hatreds among the leaders—all these factors have militated against the evolution of a cohesive, homogeneous, national Peru. Furthermore, whereas in Mexico, in Ecuador, and in Colombia, the Spaniards founded their capital cities in the temperate mountains, in the midst of the Indian population, in Peru they founded the capital at sea level, far from the great centers of native life. They faced the sea, engaged in commerce, and kept their backs to the densely populated mountain hinterland. Thus the gulf—racial, social, economic,

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and political—between the white and the Indian population has steadily widened, and the process of national integration has thereby been immeasurably lengthened.

Much has been done in the last two decades to weld the various provinces together by roads and railroads. But much more remains to be done if the eastern forestlands are to be developed and incorporated into the national economy—developed particularly for their potential food resources which would cut down on the amounts now imported. And much also remains to be done to incorporate the Indian into the body politic, social, and economic of the nation. This calls for, first of all, a vigorous educational program.

An experiment undertaken in the 1950's by a group from Cornell University, in collaboration with the Indigenous Institute of Peru and with the support of the Peruvian government, is a revealing indication of how the Indian population may be expected to respond to a concerted educational effort and an introduction to a more modern way of life. The *hacienda* at Vicos, in the Callejón de Huaylas Valley, consisting of about 35,000 acres, at elevations of 9,000 to 14,000 feet, had been operated in the traditional manner described earlier. None of the 1,850 Quecha-speaking Indians had had any opportunity to assume responsibility in public affairs, and consequently almost no public services were maintained. Health and nutritional levels were extremely low; the average per capita consumption of calories, for instance, was about 1,500, only 70 per cent of the recommended minimum. And educational facilities and hence skills were almost completely lacking; the total school population in any one year had never exceeded 15 to 20 pupils out of a possible 350, and not infrequently the teachers put the pupils to work as gardeners or servants instead of teaching them the three Rs, or anything else, for that matter.

On the basis of preliminary studies and after consultation with the residents of the *hacienda* concerning their needs and hopes, a unified program was initiated, centered on economic development, nutrition and health, education, and social organization. Without going into the details of how the program was carried out (which would take too much space here; see "Social Change in Latin America Today," listed in the bibliography), it should be stressed that each problem was tackled in terms of understanding and respecting the local culture, enlisting the active help of members of the community, and organizing and training groups within the community to assume creative leadership.

The results obtained were truly remarkable. One example: a potato blight which had affected the entire *hacienda* was brought under control; in one year yields of healthy potatoes more than doubled; and within the next two years almost all of the Indians had adopted the newly-introduced farming techniques. In some cases yields increased as much as 400 per cent. Another example: after one year of offering free lunches at school, the number of pupils tripled; members of the community set about building a new school house with their own hands: instead of considering it unnecessary, parents began to take pride in their children's education. Another: with the increased resources available to them the Indians are initiating projects on their own, such as improving access roads, and developing a better water supply.

Encouraged by the results achieved at Vicos, the Peruvian government has launched five similar pilot projects in which it plans to demonstrate that an integrated approach to social and economic development and self-respect can indeed "crack the crust of centuries and release human energies and hopes" among the *sierra* people.

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